This section addressed a total of seven folic acid questions. Five questions explored the effect of US folic acid fortification on the following health outcomes:

- Serum and plasma red blood cell (RBC) folic acid level
- Incidence of neural tube defects (NTD)
- Incidence of cardiovascular disease (CVD)
    - Incidence of stroke
- Incidence of colon cancer

Two additional questions addressed folic acid supplementation post fortification and risk of CVD and stroke among persons with pre-existing vascular disease.

Summary of Findings

There was clear and consistent evidence for the following:

- Blood concentrations of folate have risen in the US and Canada following mandatory folate fortification. Fewer women of childbearing years have low folate blood concentrations, but there still are a small number of women of childbearing age who have low blood folate levels
- The incidence of children being born with NTDs has been reduced following mandatory folic acid grain fortification in the US and Canada. In the US, a reduction of 23% to 54% in spina bifida (SB) and a reduction of 11% to 16% in anencephaly (AN) have been reported. In Canada, a 53% reduction in SB and a 31% reduction in AN has been reported.

There was limited evidence for the following:

- There was limited evidence that stroke mortality has declined in US and Canadian populations following mandatory folate fortification
- There was limited evidence that the incidence of colorectal cancer has increased in the US and Canada following mandatory folate fortification.

[Provisional: Finally, there was clear and consistent evidence that supplementation with additional folic acid does not reduce CVD risk. There was inconsistent evidence that supplementation with additional folic acid reduce risk of stroke.]

Systematic Review Questions:

What impact has mandatory folic acid fortification had on the incidence of neural tube defect in the US and Canada? (DGAC 2010)

What effect has folic acid fortification policy had on serum folate, plasma and red blood cell folate status of US Canada women, men and children? (DGAC 2010)

What impact has mandatory folic acid fortification had on the incidence of CVD and stroke in the US and Canada? (DGAC 2010)

What impact has mandatory folic acid fortification had on the incidence of colon cancer? (DGAC 2010)

What effect does folic acid supplementation (with or without additional B vitamin supplementation) have on risk of CVD among persons with or without pre-existing vascular disease? (DGAC 2010)

What effect does folic acid supplementation (with or without additional B vitamin supplementation) have on risk of stroke among persons with or without pre-existing vascular disease? (DGAC 2010)